

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**MILKING CENTER WASTEWATER TREATMENT SYSTEM  
(NO. AND ACRE)**

**Code 719**

**DEFINITION**

A system of components for the conditioning of milking center wastewater. Components may include a settling trap, grease traps, a pump station, a pipeline distribution system, clean water exclusion devices, exclusion fencing, and a stone disposal field.

**PURPOSE**

To improve water quality by reducing the environmental impact of milking center wastewater by removing solids and fats and by treating the remaining wastewater.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies where:

- Wastewater is generated from the washing of tanks, pipelines, milking machines, and associated equipment. It may include wash water from animal preparation and parlor floors. It shall not be used to treat dumped milk or sewage from rest rooms.
- Manure from the animal housing system is handled as a solid or semi-solids.
- This practice does not apply when it is feasible to add the milking center wastewater to a liquid manure storage facility or to a municipal wastewater treatment system.

**CRITERIA**

**General**

This practice shall be located and designed according to the procedure shown in Agricultural Waste Management Field Handbook (AWMFH), Chapter 10, Section 651.1004(k), Amendment ME1, "Milking Center Wastewater Treatment System". All precast concrete materials shall be constructed according to ASTM specification C-913, Precast Concrete Water and Wastewater Structures. All other materials shall conform to applicable ASTM specifications. Components shall be suitable for the site conditions. These conditions include vehicular traffic and soil loads, corrosion of materials, flotation of tanks, and frost action.

All components of the system shall comply with applicable federal, state and local laws and codes pertaining to shoreland zoning, Dig-safe, wetlands, cultural resources, floodplains, and aquifers.

**Air Trap**

An air trap shall be installed in the distribution pipeline. The purpose is to prevent gases from entering the milking center.

**Air Vent**

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service. Contact Dan Baumert, NRCS State Conservation Engineer at 207-990-9555 or email comments and concerns to [dan.baumert@me.usda.gov](mailto:dan.baumert@me.usda.gov).

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Air vents shall be installed where needed to maintain atmospheric pressure in the system. Odors may be prevalent from air vents.

### Pipeline

For gravity systems the pipeline shall be ASTM D-1785, SCH 40, PVC pipe, or equivalent, with a minimum inside diameter of 4 inches. Minimum slope for gravity pipelines shall be 1 percent or 1/8 inch per foot. Pipe for pump systems shall meet the pump manufacturer's specifications for size and pressure rating. Provide access to the pipeline at appropriate intervals for cleanout. Minimum soil cover over the pipe shall be 12 inches. Pipe shall be located at an adequate depth or otherwise protected to avoid damage from vehicles and frost.

### Solid Traps

A settling trap shall be used to trap heavy solids.

A grease trap shall be used to remove milk fats, greases, and other floatable solids.

The combined capacity of the grease traps shall be a minimum of six (6) times the actual daily flow. Traps shall be water tight, designed not to float and be accessible year-round for periodic cleanout. Cleanout ports shall have risers and covers for accessibility and safety.

### Pump

A pump shall be used if gravity flow is not possible. A standard sanitary pumping station is recommended. The pump station shall have a riser and cover for year round access and safety.

### Distribution box

A distribution box shall be used to distribute the effluent evenly throughout the disposal field. In linear terraced disposal fields, the distribution box is not needed, but encouraged to allow access to pipes.

### Disposal Field

A site investigation is required to locate the disposal field. The disposal field should be located as far as practical from water sources, property lines and other resources of concern. See AWMFH, Amendment ME1, Table 1 for minimum setback distances from any edge of the disposal field.

A soil investigation, with at least one soil observation describing the representative soil profile, is needed to size and locate the disposal field. Select the soil profile shown in Table 2 of AWMFH, Amendment ME1, which best describes the soil on site to design the system.

Soils that are in Design Classes 2 and 3 as defined in Table 3 of AWMFH, Amendment ME1, must be modified to protect the groundwater. It is recommended that a soil scientist and an engineer review design modifications.

Exclude all surface and subsurface water from the bed.

### Fence

Fence around the disposal field as necessary to exclude equipment and animals.

## CONSIDERATIONS

The following shall be considered during design:

- On farm traffic patterns
- Accessibility to the treatment system components for maintenance.
- Adjacent land uses and visibility.
- Location and height of air vents to avoid the odors that may be prevalent in the pipeline.
- Visual aesthetics to blend the system into the surrounding landscape.
- Site, soil, and environmental factors.
- Availability of suitable backfill material.

## PLANS AND SPECIFICATIONS

Plans and specifications for installing milking center wastewater treatment systems shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

## OPERATION AND MAINTENANCE

An operation and maintenance plan shall be developed that is consistent with the purposes of this practice, its intended life, and the criteria for its design. The operation and maintenance plan shall address the following items:

- The settling trap and grease traps will be monitored regularly and periodically cleaned out as required. Proper disposal shall be in a manure storage structure, land application, or by other acceptable means.

- Maintain adequate vegetative cover on the disposal field and adjacent areas.
- Repair of damage to any earthfills, fences, pipes, and other appurtenances.
- Maintain lids and openings to underground structures to ensure year round access.
- Maintain grates on drains and subsurface drainage systems to ensure they are functional.
- Ensure that waste milk is not dumped into the treatment system.
- Strongly consider feeding out the first flush of the system to avoid excess fats from entering the system.

## REFERENCES

1. Agricultural Waste Management Field Handbook, Amendment ME1 651.1004(k)66.
2. Maine Subsurface Waste Water Disposal Rules, 144A CMR 241, Department of Human Services, Bureau of Health, Division of Health Engineering, June 1, 2000.
3. Handbook of Subsurface Wastewater Disposal in Maine, Maine Department of Economic and Community Development, January 1995.